

DRAFT MEMORANDUM

To: DNCT
From: Spreck Rosekrans and Bruce Herbold
Date: April 9, 1999
Re: Crediting Approach to an Environmental Water Account

This memo outlines a scenario for an Environmental Water Account that uses a system of credits to account for export reductions made in real time to reduce entrainment, salvage and indirect mortality. This crediting scenario offers an approach to an EWA that does not rely on the construction of storage facilities for the environment or management of those facilities (and associated conveyance) by fishery agencies or environmental managers. As explained below, the credits available could be determined by the incremental water supply benefits made available by increasing operating flexibility as estimated by comparative DWRSIM runs.

This scenario, as described below, also attempts to separate issues related to operating California's water projects as efficiently as possible for the benefit of fisheries from the contentious issues related to the overall division of total water supplies between consumptive uses and the environment. The purpose of the Environmental Water Account is find ways to use environmental water more efficiently; to offer the maximum possible protection to fisheries and their habitats, using whatever volume of water is available. CALFED is addressing the efficiency of consumptive water use through other workgroups, including Agricultural Water Use Efficiency and Economic Evaluation of Water Management Alternatives. All of these workgroups are likely to identify ways that water can be used more efficiently. It is not the role of the CALFED technical workgroups to determine that the increased efficiency, either in environmental or consumptive use, should be offset by a reduction in total volume for that use.

It is nonetheless possible, of course, to evaluate the water supply benefits of additional storage facilities, such as an enlarged Shasta Dam, Delta Wetlands, or south-of-Delta groundwater. These facilities should be evaluated, however, by a separate DWRSIM run from the one used to estimate the amount of credits available. With separate simulations, it is possible to distinguish the benefits and appropriately allocate the costs of institutional and structural changes to California's water management system.

BASE SCENARIO (DWRSIM)

The starting point for evaluation of the crediting approach should reflect current regulatory conditions. These are the conditions simulated in DWRSIM Study 816, which include the following criteria:

1. 1995 Level hydrology (1995d06e) and upstream depletions based on DWR Bulletin 160-98 land use projections (73 years: 1922-1994).
2. 1995 Level SWP and CVP demands. Total SWP demand varies from 2.6 MAF

to 3.6 MAF/year depending on water conditions in the service area.

Total CVP demand is 3.3 MAF/year.

3. Meet the 1994 Bay-Delta Accord export and water quality requirements, except Vernalis minimum and pulse flow requirements.

4. Meet the CVPIA (b)(2) AFRP Upstream and Delta Actions 1, 3, 4, 5, 6 and 7 as described in the November 1997 AFRP document.

5. Meet Trinity River minimum flows below Lewiston Dam per USBR Draft CVPIA PEIS (390 – 750 TAF/year).

INTERMEDIATE SCENARIO (DWRSIM)

The purpose of this scenario is to determine the degree to which credits might be made available if the benefits of the following relaxed operating criteria are made available to the EWA.

Increase Banks pumping limit to 8500 CFS.

Allow unlimited use of the joint point of diversion.

Relax the E/I ratio.

A DWRSIM Study should be run which adds these assumptions to those under Study 816.

The increased south-of-Delta deliveries under the Intermediate Scenario would be used to determine available credits. Depending on the results of the DWRSIM run, it may be appropriate to allocate credits in accordance with year type. It should be noted that the credits made available by these operational changes should, in most cases, be greater than the incremental water supply, as the projects would be able to re-operate in response to the real-time export curtailments associated with the credits.

CREDITING SCENARIO (GAMING TEAM)

The environmental manager is allocated the amount of export reduction credits associated with the Intermediate Scenario. The prescriptive rules governing the export projects would include the three relaxed criteria identified under the Intermediate Scenario.

The environmental manager is allocated an initial volume of credits on October 1 of each year. These credits may be increased during the course of the winter, depending on hydrology. When conditions warrant, the environmental manager can spend the credits by implementing a real-time shutdown of the export pumps. Water supply operators may then respond by finding other times to move water south through the export pumps.

The final estimate of how many credits would be generated by expanded Banks capacity, joint point of diversion and relaxation of the E/I ratio would not be made until the Crediting Scenario has been evaluated. This estimate will depend on the degree to which the water supply operators are able to make up for the real-time export reductions. Again

this amount may depend on hydrology or be largely independent of hydrology.

In other ways the crediting approach would be the same as the strict accounting approach.

Under the crediting approach, the EWA should include other assets, including funds to make upstream purchases. This fund could be augmented during some years by selling any unused credits. The EWA managers should also be allowed to use storage at existing reservoirs (with junior rights under this scenario) and to reschedule instream flows in accordance with the best available science if there is no harm to water users.

WATER SUPPLY SCENARIO (DWRSIM)

This is an optional scenario, and not directly related to evaluation of an EWA. Those who are interested in the benefits, in terms of increased export volumes, of additional storage facilities can estimate this benefit by modeling additional storage facilities and comparing these modeling studies to either the Base or Intermediate Scenario. Since the Intermediate Scenario includes an increment of exports that is expected to go to the EWA, the incremental water supply may be estimated as:

BASE SCENARIO EXPORTS +
(WATER SUPPLY SCENARIO EXPORTS - INTERMEDIATE SCENARIO
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